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TEMPORAL LOBE SIGNS, THE DISSOCIATIVE EXPERIENCES SCALE AND THE HEMISPHERIC QUOTIENT[1]

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Summary.—Scores for the inference of Temporal Lobe Signs, the Dissociative Experiences Scale, and the Hemispheric Quotient were obtained for men and women. Moderately strong positive correlations (.70) were found between indices of complex partial epileptic-like signs and the Dissociative Experiences Scale; there were no correlations between the Hemispheric Quotient and the Dissociative Experiences Scale or Temporal Lobe Signs. However, factor-derived left hemispheric items (related to religiosity, verbal meaning, and sense of presence) and right hemispheric items (depersonalization, automatic behaviors) displayed the appropriate Hemispheric Quotient. Scores on the Dissociative Experiences Scale were most strongly correlated with the right hemispheric factor.

The Personal Philosophy Inventory (Makarec & Persinger, 1990) contains items derived theoretically (Persinger, 1983) to infer lability within the temporal lobes. Clusters of these items have displayed mild to moderate positive correlations with suggestibility, imaginings, hypomania, and psi experiences (Persinger, 1989). Many of the phenomenological clusters are associated with traditional descriptions of dissociative experiences. Loewenstein and Putnam (1988), who utilized the Dissociative Experiences Scale developed by Bernstein and Putnam (1986), have shown that these symptoms increase proportionally along a continuum that includes the normal person, limbic epileptics and the extreme dissociatively (multiple personality) disordered.

We hypothesized that: (1) moderately strong (.60 to .70) positive correlations should occur for both men and women between the Dissociative Experiences Scale and the temporal lobe clusters of the Personal Philosophy Inventory and (2) the two "hemispheric" factors of the latter inventory should correlate weakly (.25 to .35) with the Hemispheric Quotient as described by Vingiano (1989). To test this, all of the 16 men and 40 women who were enrolled in a first-year university psychology course for part-time students were administered the three scales during the first week of classes. Because the means and standard deviations (in parentheses) for the Dissociative Experiences Scale and Hemispheric Quotient scores of the men [17.6 (7.5) and 0.5 (0.2)] and women [16.5 (12.9) and 0.59 (0.20)] did not

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differ from normative populations (Ross, Joshi, & Currie, 1990; Vingiano, 1989), we concluded that this small sample was not anomalous.

The scores for each of the 28 Dissociative Scale items (0 through 100) and each of the 16 hemispheric quotient and 140 Personal Philosophy items (true/false, i.e., 0, 1) were loaded onto a VAX 4000 computer. Pearson correlations (and plotted visualizations to ensure absence of outliers) were computed for each sex, separately, on the Dissociative Experiences Scale scores (mean of the 28 items) and the following clusters from the Personal Philosophy Inventory (number of items in parentheses): control (15), complex partial epileptic signs (16), interictal-like behaviors (14), and temporal lobe relevant (26) items; the primary scale is composed of the 30 complex partial epileptic signs and items for interictal-like behaviors (Makarec & Persinger, 1990) while the total scale is composed of all 56 items (Persinger & Makarec, 1991). Each cluster score was the percentage of the numbers of items that were positively endorsed. The hemispheric factors "A" (24 items) and "B" (14 items) were derived by limiting extraction to two factors for all 56 items from 868 subjects (Persinger & Makarec, 1991).

Whereas the complex partial epileptic signs cluster contains experiences that are considered milder variants of ictal states occurring within the normal population, the interictal-like behavioral items refer to experiences that emphasize memory disruptions and automatic behaviors. The temporal lobe relevant cluster includes items that involve classically associated self-perceptions, i.e., "I am more religious than others." Control items are employed to accommodate "yes" responders and the prevarication scale contains most of the items from the MMPI *L* (popularly labelled as the "lie") scale. The specific items for each cluster have been published elsewhere (Makarec & Persinger, 1990). The means and *SD*s for the clusters were: control 79 (11)%, prevarication 71 (15)%, complex partial epileptic signs 32 (18)%, interictal-like signs 37 (15)%, temporal lobe relevant behaviors 42 (12)%, and total score 38 (12)%.

For the men, the following correlation coefficients ($r > .53$, $p < .05$) were obtained between the mean Dissociative Experiences score and the Personal Philosophy clusters: control .29, prevarication −.35, complex partial epileptic signs .77, interictal-like behavior .42, temporal lobe relevant behaviors .54, and total temporal lobe-like signs .83; for the women the coefficients ($r > .33$, $p < .05$) between the Dissociative Experiences score and the Personal Philosophy clusters were: control .34, prevarication .22, complex partial epileptic signs .67, interictal-like behaviors .44, temporal lobe relevant behaviors .57, and total temporal lobe-like signs .72. Graphic representation verified the consistency of the relationships. After removal of the variance (by partial correlation) associated with yes-responding (control cluster), the Dissociative Experiences correlations with clusters on the Temporal Lobe Signs still

ranged between .61 and .66. The coefficients between the Personal Philosophy clusters and the Hemispheric Quotient were not statistically significant.

Because there were no substantial differences between the correlation coefficients for scores on the Dissociative Experiences Scale and those of the Personal Philosophy Inventory or their means for the men and women, the groups were combined. To see which of the 16 phenomenological subclusters were most correlated with the Dissociative Experiences Scale, additional Pearson *r*s were obtained. The strongest ($p < .01$) relationships occurred with visual anomalies (.62), auditory-vibrational experiences (.47), automatic behaviors (.40), depersonalization (.45), the sense of a presence (.45), paranormal experiences (.44), and limbic motor behaviors (.42). Only the first four clusters entered a step-wise multiple regression ($MR = .71$); their partial regression coefficients were 20, 10, 10, and 8, respectively ($F_{4,49} = 20.23$, $p < .001$).

For the Hemispheric Quotient, the only significant correlations occurred for perseveration (.42), limbic motor (.41), and writing clusters (−.30). The first four clusters (for comparison with the Dissociative Experiences Scale) to enter the step-wise regression ($MR = .67$) were perseveration, limbic motor, paranormal, and automatic behaviors; their partial coefficients were .37, .30, −.38, and .24 ($F_{4,49} = 9.84$, $p < .001$). The correlation between the Hemispheric Quotient and the Dissociative Experiences Scale was not significant (.08).

To discern the presence of "hemispheric" effects, the Dissociative Experiences scores and Hemispheric Quotient were correlated with the two clusters that had been derived by obtaining a maximum of two factors from the 56 items (Persinger & Makarec, 1991). We called Factor A, which was loaded by items referring to automatic behaviors, memory blanks, visual anomalies, and depersonalization, the right hemispheric factor. The smaller Factor B, which was loaded by items referring to meaningfulness, poetry-diary writing, sense of presence, and religiosity, was the left hemispheric factor. The Dissociative Experiences score was significantly ($p < .01$) correlated with both the left (.39) and right hemispheric (.67) factors. People, who displayed a higher Hemispheric Quotient (more right hemispheric), scored lower on our left hemispheric factor (−.38, $p < .01$); the correlation with the right hemispheric factor was not significant (.17).

Partial correlation, after controlling for the right hemispheric factor, gave a first-order coefficient of −.54 between the hemispheric quotient and Factor B (left hemispheric) of the 56 items on the Temporal Lobe Signs (Persinger & Makarec, 1991); the Dissociative Experiences Scale coefficient was .10 (ns). After controlling for the left hemispheric factor, the first-order correlations between our right hemispheric factor and Vingiano's hemispheric

quotient and Bernstein and Putnam's dissociative experiences measure were .45 and .57, respectively. These results support the hypothesis that dissociative experiences are associated with right hemispheric processes and reaffirm the hypothesis of Bear (1986) that enhanced left temporal lobe lability is associated with ideative traits and religiosity.

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